

CLAIMS

What is claimed is:

1. A scroll machine comprising:

a first scroll member having a first scroll wrap extending from a first end plate, said first scroll wrap defining a first outer end;

a second scroll member having a second scroll wrap extending from a second end plate, said second scroll wrap defining a second outer end, said second scroll wrap being intermeshed with said first scroll wrap;

a drive mechanism for causing said second scroll member to orbit with respect to said first scroll member, said first and second scroll members forming a first enclosed space when said first outer end contacts said second scroll wrap and forming a second enclosed space when said second outer end contacts said first scroll wrap, said first and second enclosed spaces simultaneously moving from a radial outer position to a central position during said orbiting of said second scroll member;

a single fluid injection passage extending through one of said first and second scrolls, said single fluid injection passage injecting fluid into said first enclosed space and into said second enclosed space at different times during said orbiting of said orbiting scroll member.

2. The scroll machine according to Claim 1 wherein said single fluid injection passage extends through said first scroll member.

3. The scroll compressor according to Claim 1 wherein said single fluid injection passage injects fluid into said first and second space simultaneously.

4. The scroll compressor according to Claim 3 wherein said single fluid injection passage begins communication with said first enclosed space simultaneously with the forming of said first enclosed space.

5. The scroll compressor according to Claim 4 wherein said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

6. The scroll compressor according to Claim 4 wherein said single fluid injection passage begins communication with said second enclosed space simultaneously with the forming of said second enclosed space.

7. The scroll compressor according to Claim 6 wherein said single fluid injection passage is in communication with said first enclosed space when said single fluid injection passage begins communication with said second enclosed space and said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

8. The scroll compressor according to Claim 1 wherein said single fluid injection passage begins communication with said first enclosed space simultaneously with the forming of said first enclosed space.

9. The scroll compressor according to Claim 8 wherein said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

10. The scroll compressor according to Claim 8 wherein said single fluid injection passage begins communication with said second enclosed space simultaneously with the forming of said second enclosed space.

11. The scroll compressor according to Claim 10 wherein said single fluid injection passage is in communication with said first enclosed space when said single fluid injection passage begins communication with said second enclosed space and said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

12. The scroll compressor according to Claim 1 wherein said single fluid injection passage has an effective diameter greater than a thickness of said second wrap.

13. The scroll compressor according to Claim 1 wherein said first and second scroll wraps extend a different angular amount.

14. The scroll compressor according to Claim 1 wherein said first scroll wrap extends a first angular amount and said second scroll wrap extends a second angular amount, said first angular amount being greater than said second angular amount.

15. The scroll compressor according to Claim 14 wherein said single fluid injection passage injects fluid into said first and second space simultaneously.

16. The scroll compressor according to Claim 16 wherein said single fluid injection passage begins communication with said first enclosed space simultaneously with the forming of said first enclosed space.

17. The scroll compressor according to Claim 16 wherein said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

18. The scroll compressor according to Claim 16 wherein said single fluid injection passages begins communication with said second enclosed space simultaneously with the forming of said second enclosed space.

19. The scroll compressor according to Claim 18 wherein said single fluid injection passage is in communication with said first enclosed space when said single fluid injection passage begins communication with said second enclosed space and said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

20. The scroll compressor according to Claim 14 wherein said single fluid injection passage begins communication with said first enclosed space simultaneously with the forming of said first enclosed space.

21. The scroll compressor according to Claim 20 wherein said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

22. The scroll compressor according to Claim 20 wherein said single fluid injection passage begins communication with said second enclosed space simultaneously with the forming of said second enclosed space.

23. The scroll compressor according to Claim 22 wherein said single fluid injection passage is in communication with said first enclosed space when said single fluid injection passage begins communication with said second enclosed space and said single fluid injection passage is in communication with said second enclosed space when said single fluid injection passage begins communication with said first enclosed space.

24. The scroll compressor according to Claim 1 wherein said single fluid injection passage extends through said second scroll member.